Pension & Health Benefits Committee

California Public Employees' Retirement System

Agenda Item 4

March 13, 2012

ITEM NAME: Review of Discount Rate and Other Economic Assumptions

PROGRAM: Actuarial Office

ITEM TYPE: Action

RECOMMENDATION

Staff recommends that the Pension and Health Benefits Committee accept and recommend to the Board the following:

1. Lower the price inflation rate assumption from 3.00 percent to 2.75 percent for all plans that participate in the Public Employees' Retirement Fund (PERF) for actuarial valuations dated June 30, 2011, and later.
2. Lower the discount rate assumption from 7.75 percent to 7.25 percent for all plans that participate in the PERF for actuarial valuations dated June 30, 2011, and later.
3. Use the recommended assumption changes in all affected member calculations effective as follows:
    a. For service credit purchases under the present value method, including payment schedules, the use of the new discount rate will apply to all requests postmarked on or after March 15, 2012.
    b. For retirement applications, any application with a retirement date on or after March 15, 2012, will be subject to the new discount rate.

EXECUTIVE SUMMARY

Staff is recommending lowering the price inflation assumption as well as adopting a discount rate assumption that includes a higher margin for adverse deviation than the current discount rate assumption. The recommendation is to lower the discount rate assumption from 7.75 percent to 7.25 percent. This change is expected to impact employer contribution rates as shown in Table 1 below. Please see Table 2 later in this agenda item for more details.

Table 1.

Impact of Lowering the Discount Assumption to 7.25%

Plans	Estimated Increase in Employer Rate (% of Payroll)
Miscellaneous/Schools Plans	3.2% to 4.5%
Safety Plans	5.0% to 6.6%

Should the Board wish to continue with a discount rate assumption that contains low to no margin for adverse deviation, more information is included below.

BACKGROUND
In order to keep economic assumptions current, it is essential to review actuarial assumptions periodically. The price inflation assumption is currently 3 percent and this assumption was last reviewed in 2004. The real wage inflation assumption is currently .25 percent above price inflation (3.25 percent) and was last reviewed in 1998. The real discount rate assumption was last reviewed in March 2011 and is currently 4.75 percent above inflation (7.75 percent).

A review of the economic assumptions is required every four years in accordance with Board policy ACT-95-05D. An economic assumptions study was commissioned to review the price and wage inflation assumptions used in the actuarial valuations for CalPERS. See Attachment 1 for a full copy of the report prepared by GRS Consultants and Actuaries.

In addition, the Actuarial Office was asked by the Board in March 2011 to review the discount rate assumption in light of its decision to lower the margin for adverse deviation and present its findings to the Board in March 2012.

ANALYSIS
Actuarial valuations are performed annually to determine plan liabilities and the contribution rates necessary to adequately fund them. To perform actuarial valuations, actuaries use various demographic and economic assumptions to set a contribution schedule of employee and employer contributions designed to accumulate with interest to equal the total present value of benefits by the time every member has left employment.

Price Inflation Assumption
Price inflation is a progressive increase in the general level of prices. It is usually measured by annual increases in the Consumer Price Index[1]. It is referenced in the Public Employees Retirement Law for determining the annual cost-of-living adjustment (COLA) for CalPERS retirees. The inflation assumption also underlies most of the other economic assumptions used in the actuarial valuation, including the investment return, individual salary increases, payroll growth, and COLA assumptions. Changing the price inflation assumption would have an impact on employer contribution rates, service credit purchases, and Optional Settlements at retirement.

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[1] There are several measures of inflation released by the Department of Labor Statistics. The Consumer Price Index for All Urban Consumers (CPI-U) is the one referenced in the PERL.

Currently, the Actuarial Office uses a 3.00 percent annual price inflation assumption. The price inflation assumption has not been changed since 2004. At that time, it was lowered from 3.50 percent to 3.00 percent.

The Actuarial Office, through a Letter of Engagement, hired GRS to perform a review of various economic assumptions. Attachment 1 provides the results of that study. As can be seen in the report, price inflation has declined over the last century. It has ranged from 3.23 percent (over the past 100 years) to 2.15 percent (over the last 5 years). It would be difficult to ignore the steady decline over the past 25 years.

GRS believes a reasonable long term inflation assumption is between 2.50 percent and 3.00 percent. They recommend decreasing the inflation assumption from 3.00 percent to 2.75 percent. As shown in the GRS report, inflation has been 2.57 percent for the last 20 years. The report also quotes forecast of price inflation from investment consulting firms, bond markets, as well as, other sources including the Office of the Chief Actuary for the Social Security Administration. Most of the long-term forecasts provided in the report put inflation in the 2.4 percent to 3.0 percent range.

For reasons similar to those provided in the GRS report, the Actuarial Office is also recommending a decrease in the inflation assumption from 3.00 percent to 2.75 percent. Please refer to Table 2 on page 5 of this agenda item for the estimated impact of lowering the price inflation assumption to 2.75 percent.

Wage Inflation Assumption
The salary growth assumption consists of three components: price inflation, real wage inflation, and merit increases. Price inflation was discussed earlier. Merit increases were reviewed and updated after the Actuarial Office completed its demographic assumption study in 2010. It will be reviewed again as part of the next experience study that is scheduled to be completed in about two years. The real wage inflation is the wage inflation net of price inflation.

Currently, the real wage inflation assumption is 0.25 percent. The real wage inflation assumption has not been changed since 1998. At that time, it was increased from 0.00 percent to 0.25 percent.

As part of its review of economic assumptions, GRS recommended that the real wage inflation be increased from 0.25 percent to 0.50 percent. Details on the recommendation can be found in Attachment 1.

In light of the current economic environment, the Actuarial Office believes that wage inflation is likely to be suppressed in the near term. Historical data shows that wage inflation has generally been higher than price inflation by close to one percent. Staff expects that over time the real wage inflation assumption will need to move toward the historical levels of wage inflation. The Actuarial Office is not recommending a change to the real wage inflation assumption at this time. In order to minimize the frequency of assumption changes, staff will be conducting another review in two years as we line up the review of both economic and demographic assumptions.

Discount Rate Assumption
The primary economic assumption is the discount rate assumption. The current assumption is 7.75 percent. The discount rate assumption used for actuarial valuations is comprised of a real return assumption and an inflation assumption. The current price inflation assumption is 3.0 percent per year. The current real return assumption is 4.75 percent. Assuming the Board adopts the recommended price inflation assumption of 2.75 percent, the corresponding discount rate assumption will need to be lowered to 7.50 percent.

Prior to determining the final discount rate assumption that should be used for actuarial valuations, another discussion regarding a margin for adverse deviation needs to take place. As was mentioned last March when a discussion surrounding the discount rate took place, staff believes a margin is preferable for the long term security of benefits of our members while keeping in mind that such margin should not be excessive in order to preserve generational equity.

When the Board looked at the assumed investment return last year, the median net return over the time horizon selected was 7.80 percent. Staff recommended a discount rate of 7.50 percent in order to retain a 30 basis point margin, which is close to the margin historically maintained. Staff also noted that by retaining the 7.75 percent assumption, the Board could implicitly elect to reduce the margin for adverse deviation to 5 basis points if it felt that changing the discount rate would put too much pressure on employer budgets in light of the economic situation. The Board elected to leave the discount rate at 7.75 percent thus reducing the margin.

With the adoption of the reduction in the price inflation rate to 2.75 percent, the median investment return net of administrative expenses is now 7.53 percent. Accordingly, staff recommends that the discount rate assumption be lowered to 7.25 percent per year to have a margin for adverse deviation of 28 basis points, similar to that historically used. Given that the state of the economy has put severe pressure on employers' budgets, staff recognizes that it may be appropriate to continue at a lower level of margin for adverse deviation (i.e., 3 basis points) and elect a 7.50 percent discount rate assumption.

The balancing of the level of risk taken on the funding of the plan with the impact on employers, stakeholders and the public in general is fundamentally a task of the Board. This fundamental decision is a fiduciary one that should be in the best interests of the members and beneficiaries and be reasonably prudent, given the circumstances. The primary interest of the members is an actuarially sound pension plan. The discount rate adopted by the Board, whatever it ends up being, should be a reasonably prudent assumption designed to achieve this goal over the long term. Staff believes that either using a lower margin for adverse deviation and choosing a discount rate assumption of 7.50 percent or lowering this assumption to 7.25 percent would be a reasonably prudent assumption. Both assumptions would be able to provide for an actuarially sound system over time with a 7.25 percent assumption providing slightly more security than 7.50 percent.

To help display the risk to employers and stakeholders, below is a table providing an estimate of the potential increase in employer contribution rate if the discount rate assumption is lowered to either 7.25 percent (a real rate of return of 4.50 percent) or to 7.50 percent (a real rate of return of 4.75 percent). Note that both the 7.25 percent and 7.50 percent discount rate assumption are based on a price inflation assumption of 2.75 percent. The table shows the impact for each State plan, the Schools pool and a range of the impact for public agency miscellaneous plans and public agency safety plans.

Table 2.

Estimated Increase in Employer Contribution Rates (% of Payroll)

Group	Discount Rate of 7.25% (Lowering Price Inflation to 2.75% with a Margin for Adverse Deviation)	Discount Rate of 7.50% (Lowering Price Inflation to 2.75%)
State Miscellaneous	4.2%	1.6%
POFF	5.9%	2.2%
CHP	6.6%	2.4%
Schools	3.2%	1.2%
Public Agency Miscellaneous	3.5% to 4.5%	1.0% to 2.0%
Public Agency Safety	5.0% to 6.5%	2.0% to 3.0%

These estimated increases would take place in fiscal year 2012-2013 for the State and the Schools employers while it would be effective a year later in fiscal year 2013-2014, for public agencies.

See Attachment 2 for details on how the recommendation for the discount rate assumption was derived.

Affiliate Funds
This agenda item addresses only the discount rate assumption to be used for plans invested in the PERF. Over the next few months, the Actuarial Office will bring an agenda item to establish an appropriate discount rate for the various affiliate funds, including Judges Retirement Fund, the Judges Retirement Fund, the Legislators Retirement Fund, as well as, the California Employers' Retiree Benefit Trust Fund.

Any recommendations for a discount rate assumption for these funds will be done in a manner consistent with the approach used for the PERF.

Impact on Member Calculations
Staff is recommending that, if the discount rate and price inflation assumptions are lowered, the new assumptions should be used in all member calculations; including, but not limited to, the election of optional settlement factors at retirement, service credit purchase and the establishment of new payment schedules.

Members retiring on or after March 15, 2012, would be subject to new optional settlement factors based on the new assumptions. The new assumptions will result in a decrease in the retirement benefit in most cases for members electing an optional form of benefit at retirement. Staff expects that most members electing an optional form of benefit at retirement will have to pay up to two percent for an optional benefit.

For service credit purchases under the present value method, any request postmarked, faxed or delivered to CalPERS on or after March 15, 2012, would be based upon the new assumptions. Note that lowering the discount rate will result in an increase in cost for members to purchase service. The cost for service credit purchases under the present value method is expected to increase between 5 percent and 13 percent when looking at the most common ages at which members currently buy service. Note that the actual increase for some members would be more.

At this time, staff is trying to determine how quickly the computer systems can be updated to implement the new assumptions. If necessary, retirement applications may have to be processed under the current assumptions with adjustments made later to the member’s benefits. For service credit purchase requests, staff anticipates that requests will have to be put on hold until the system is ready. It has not been determined at this time when the new service credit purchase factors will be ready for use in our systems.

BENEFITS/RISKS

Consistent with CalPERS core values, the adoption of new economic assumptions will help ensure that over the long term the members will have an actuarially sound pension plan and help preserve generational equity. However, as stated above, the adoption of new actuarial assumptions will result in cost increases at a time when employers can least afford it.

If new actuarial assumptions are not adopted, there is a risk that the benefits will not be pre-funded adequately and could result in additional cost being passed to future generations unless higher returns are achieved in the future.

ATTACHMENTS

1. Economic Assumption Study
2. Discount Rate Assumption

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